General Description

SY8825 is an IC specially designed for TWS charging cradle. The device is integrated with a charger and a boost inside. The charging current can be adjusted externally. The boost discharger module integrates two load switches for output current limiting protection. Load in detection, load existing detection, and load current detection are also available.

SY8825 supports discharge control through an enable signal EN, so the MCU can control the discharge function of the IC directly through EN.

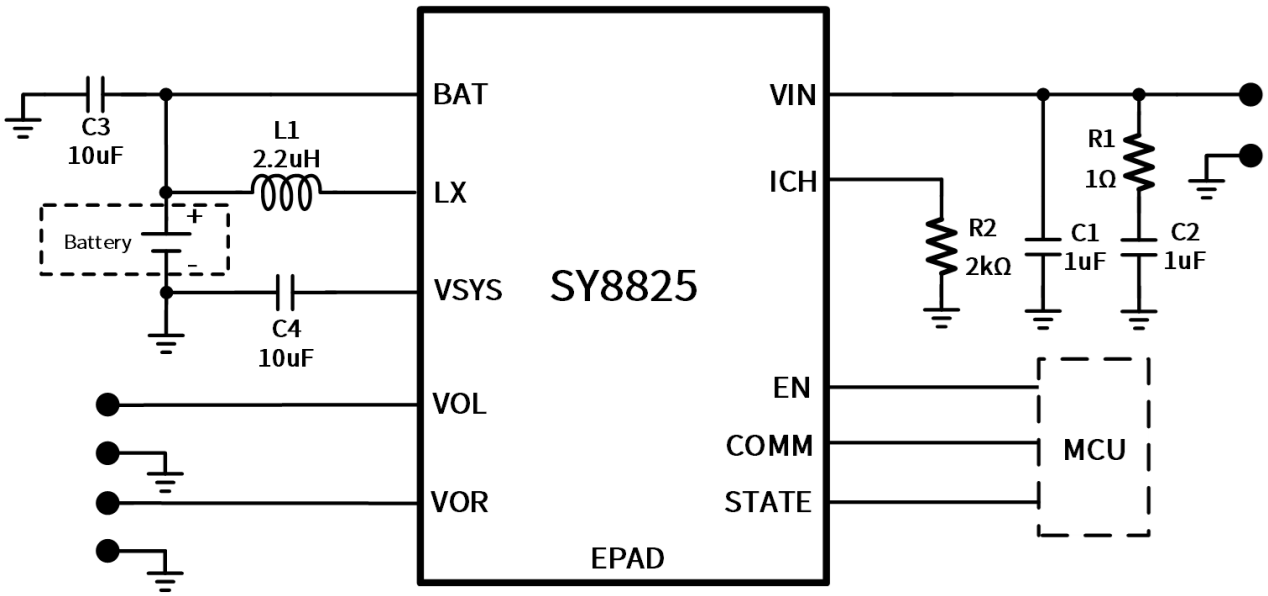
SY8825 integrates a single-wire state code output, which is convenient for the IC to report the IC state to the MCU. SY8825 simplifies the peripheral design circuits and components, providing a simple and easy-to-use solution for TWS charging cradle.

SY8825 is offered in package ESSOP10.

Applications

- Charging cradle of TWS headset
- Portable lithium battery application
- Other low-power device application

Features

- Standby current in auto recognition state: 5uA
- Standby current in constant output state: 2.5uA
- Charge current is set by external resistor.
- Charge current up to 1A
- Charging current temperature adjustment function, the charging current automatically decreases with the increase of temperature.
- Charge termination current: C/10, automatically recharge
- Terminated charge voltage: 4.2V/4.35V, the accuracy reaches 1%
- Over voltage protection is integrated
- Synchronous boost output is 5.05V with high efficiency up to 93%@0.1A
- Load in detection
- Support load current detection. Detection for light load current: 4.5mA
- Load current two-level overcurrent protection
- Support 5.05V constant output
- Thermal regulation for boost output
- Overcurrent protection, short circuit protection, overvoltage protection, and over temperature
- Enable control and state control
- State code output
- 1-4 LED display mode, external automatically detection.
- KEY version: Integrated button function, click to start the discharge and battery display, long press the button for 3 seconds to close the discharge
- HALL version: Hall chip support direct drive, close-lid automatic start discharge, open-lid earbuds automatically start back to connect

Typical Application Circuit